

WHAT IS CLAIMED IS:

1. A method of making a lamp tube having a first end and a second end, the method comprising:

5 introducing a first quantity of a luminescent substance into a first end of the lamp tube; and

introducing a second quantity of a luminescent substance into the second end of the tube.

10 2. The method according to claim 1, wherein introducing a first quantity of a luminescent substance into a first end of the lamp tube further comprises positioning the first end of the lamp tube at the first location in a tube treatment assembly prior to introducing the first quantity of the luminescent substance into the first end of the lamp tube, the method further comprising the step of repositioning the tube such that the second end is positioned at the first location prior to introducing the 15 second quantity of luminescent substance into the second end of the tube.

20 3. The method according to claim 2, wherein positioning the first end of the lamp tube at the first location further comprises vertically orienting the tube in the tube treatment assembly, and repositioning the tube further comprises repositioning the tube in a vertically oriented position.

4. The method according to claim 2, wherein the tube is oriented at an acute angle in the tube treatment assembly when one of the first end and second end are positioned at the first location.

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5. The method according to claim 1, further comprising the steps of:

introducing a first quantity of air into the tube after introducing the first quantity of the luminescent substance, the first quantity of air drying the first quantity of luminescent substance; and

30 introducing a second quantity of air into the tube after introducing the second quantity of the luminescent substance, the second quantity of air drying the second quantity of luminescent substance.

6. The method according to claim 5, wherein introducing the first quantity of air further comprises blowing the first quantity of air into the second end of the tube, and introducing the second quantity of air further comprises blowing the second quantity of air into the first end of the tube.

7. The method according to claim 1, further comprising the steps of:  
cleaning a portion of an inside surface of the first end after introducing the first quantity of the luminescent substance; and

10 cleaning a portion of an inside surface of the second end after introducing the second quantity of the luminescent substance.

8. The method according to claim 1, wherein introducing a first quantity of a luminescent substance further comprises introducing a first quantity of phosphor, and introducing a second quantity of a luminescent substance further comprises introducing a second quantity of phosphor.

9. The method according to claim 1, wherein introducing a second quantity of a luminescent substance further comprises introducing a second quantity equivalent to the first quantity of a luminescent substance.

20 10. The method according to claim 1, wherein introducing a first quantity of luminescent substance further comprises applying a vacuum to the second end of the tube, the vacuum drawing the luminescent substance into the tube, and introducing a second quantity of luminescent substance further comprises applying a vacuum to the first end of the tube, the vacuum drawing the luminescent substance into the tube.

30 11. The method according to claim 1, wherein introducing a first quantity of a luminescent substance into a first end of the lamp tube further comprises introducing the first quantity of the luminescent substance into a first end of a cold cathode fluorescent lamp tube, and introducing a second quantity of a luminescent substance into a second end of the tube further comprises introducing a second

quantity of the luminescent substance into a second end of the cold cathode fluorescent lamp tube.

12. The method according to claim 1 wherein introducing a first quantity of a luminescent substance into a first end of the lamp tube further comprises introducing the first quantity of the luminescent substance into a first end of a xenon lamp tube, and introducing a second quantity of a luminescent substance into a second end of the tube further comprises introducing a second quantity of the luminescent substance into a second end of a xenon lamp tube.

10 13. The method according to claim 1, wherein introducing a first quantity of a luminescent substance into a first end of the lamp tube further comprises introducing the first quantity of the luminescent substance into a first end of a linear, cylindrical tube, and introducing a second quantity of a luminescent substance into a second end of the tube further comprises introducing a second quantity of the luminescent substance into a second end of the linear, cylindrical tube.

20 14. An illumination source comprising a linear tube comprising a first end and a second end, the tube having an inner surface having a luminescent substance distributed thereon, a longitudinal distribution density of the luminescent substance having a minimum at a first point of the inner surface, the tube having a luminescent substance density greater than the minimum at each of a second and third point of the inner surface, the first point longitudinally located between the second and third points.

25 15. The illumination source according to claim 14, wherein the luminescent substance density of the second and third points are equivalent.

30 16. The illumination source according to claim 14, wherein the luminescent substance is phosphor.

17. The illumination source according to claim 14, wherein the tube includes a first electrode mount area and a second electrode mount area, the second point longitudinally located between the first point and the first electrode mount area, the third point longitudinally located between the second point and the second electrode mount area.

5           18. The illumination source according to claim 14, wherein the illumination source is a cold cathode fluorescent lamp.

10           19. The illumination source according to claim 14, wherein the illumination source is a xenon lamp.